

# PATENT ABSTRACTS OF JAPAN

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(11)Publication number : 05-227132

(43)Date of publication of application : 03.09.1993

(51)Int.Cl.

H04K 1/00  
H04B 1/50

(21)Application number : 04-027955

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(22)Date of filing : 14.02.1992

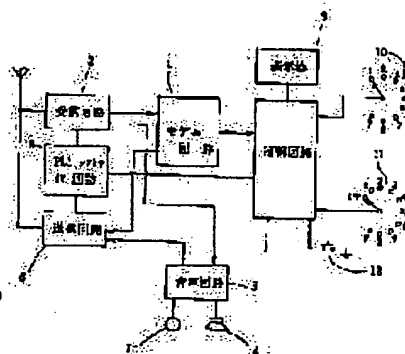
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## (54) RADIO COMMUNICATION EQUIPMENT

### (57)Abstract:

**PURPOSE:** To improve privacy on a call by setting a transmission channel and a reception channel arbitrarily by the operation of a user in half duplex radio communication.

**CONSTITUTION:** When the call between two persons is performed and for example, a reception channel setting switch 10 is set at channel 5 and a transmission channel setting switch 11 at channel 2 (assuming that respective channel is defined in advance), a control circuit 1 controls a PLL synthesizer circuit 8 so that a reception circuit 2 can tune with channel 5 by disabling the operation of a transmission circuit 6 when a talk switch 12 is turned off, and controls the synthesizer circuit 8 so that the transmission circuit 6 can perform transmission on channel 2 by disabling the operation of the reception circuit 2 when the talk switch 12 is turned on. Therefore, a third party can listen to only the call in one direction, which improves the privacy on the call.



## LEGAL STATUS

[Date of request for examination] 22.04.1998

[Date of sending the examiner's decision of rejection] 16.10.2001

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

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[Date of requesting appeal against examiner's  
decision of rejection]

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**CLAIMS**

[Claim(s)]

[Claim 1] In what has a transmitting means and a receiving means and performs radio by the half duplex A means to set transmit frequencies as arbitrary channels, and a means to set received frequency as arbitrary channels, If said transmitting means and a receiving means will be controlled to the channel according to it if a separate channel is set up by said each setting means, and a predetermined channel is set up by one of setting means The radio communication equipment characterized by both said transmitting means and receiving means establishing the control means controlled to the channel.

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**DETAILED DESCRIPTION**

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[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention relates to the radio communication equipment which makes radio by half duplexes, such as a transceiver.

[0002]

[Description of the Prior Art] In recent years, the radio communication equipment which makes unnecessary license of the transceiver of the half-duplex currently indicated by JP,61-9946,A etc. is spreading quickly with amendment of Wireless Telegraph Law.

[0003]

[Problem(s) to be Solved by the Invention] By the way, in a transceiver, in order for the users per channel to increase in number very much since nine channels and a limit have a message channel, and to set transmission and reception as the same channel since it is a half duplex, and to communicate, all the contents of a message will leak to a third person.

[0004]

[Means for Solving the Problem] In what the radio communication equipment of this invention has a transmitting means and a receiving means, and performs radio by the half duplex A means to set transmit frequencies as arbitrary channels, and a means to set received frequency as arbitrary channels, If said transmitting means and a receiving means will be controlled to the channel according to it if a separate channel is set up by said each setting means, and a predetermined channel is set up by one of setting means Both said transmitting means and receiving means establish the control means controlled to the channel.

[0005]

[Function] Since this invention is constituted as mentioned above, it can set a transmission channel and a receiving channel as arbitration by actuation of a user.

[0006]

[Example] The example of this invention is explained based on a drawing. Drawing 1 shows the block diagram of a transceiver, and (1) is the control circuit which consists of microcomputers, and it manages the whole control according to the control program of built-in program memory. (2) is the receiving circuit which receives the sending signal from other transceivers, the received message signal is supplied to a loudspeaker (4) through a voice circuit (3), it gets over to a digital signal by the modem circuit (5), and the control signal received on the other hand is supplied to a control circuit (1). (6) is the sending circuit transmitted to other transceivers, it becomes irregular through a modem circuit (5), inputs the control signal outputted from a control circuit (1), and transmits. Moreover, the sound signal from a microphone (7) is also inputted and transmitted through a voice circuit (3). In addition, the sending circuit (6) is controlled by the control circuit (1) to be in operating state, only when transmitting. (8) is the PLL synthesizer circuit which gives a transmitted carrier signal to a local oscillation signal and a sending circuit (6) to a receiving circuit (2), and it generates a predetermined frequency based on the data from a control circuit (1). (9) is an indicator and it displays each channel number of transmission and reception on the bottom of control of a control circuit (1). (10) is the receiving channel configuration switch which consists of a rotary switch, and it can set up 1-9 channels. (11) is the

transmission channel configuration switch which similarly consists of a rotary switch, and can set up 1-9 channels and OFF. (12) is the talk switch of an auto return mold, at the time of OFF, a control circuit (1) will control a PLL synthesizer circuit (8) so that a sending circuit (6) is made into non-actuation and a receiving circuit (2) aligns with a predetermined channel, and at the time of ON, a control circuit (1) will control a PLL synthesizer circuit (8) so that a receiving circuit (2) is made into non-actuation and a sending circuit (6) transmits by the predetermined channel.

[0007] The actuation in the above-mentioned configuration is explained. First, when talking over the telephone by two users who have the transceiver of this invention For example, if a receiving channel configuration switch (10) is set as five channels and a transmission channel configuration switch (11) is set as two channels (each of this channel shall be beforehand defined among users) As mentioned above, when a talk switch (12) is OFF, make a sending circuit (6) into non-actuation, and, as for a control circuit (1), a receiving circuit (2) controls a PLL synthesizer circuit (8) to align with five channels. And when a talk switch (12) is ON, a PLL synthesizer circuit (8) will be controlled so that a receiving circuit (2) is made into non-actuation and a sending circuit (6) transmits by two channels. Therefore, a third person can hear only the message of only an one direction, but can aim at improvement in the secrecy nature of a message.

[0008] Moreover, when a receiving channel configuration switch (10) is set as five channels and a transmission channel configuration switch (11) is kept set up to OFF for example, a control circuit (1) will control reception and transmission as mentioned above as five channels. Therefore, by the case where secrecy nature is a small message, when it can telephone also to transmission and reception by the same channel, only a setup of a receiving channel configuration switch (10) is required, and operability improves.

[0009] In addition, in the above-mentioned example, although the OFF location was established in the transmission channel configuration switch (11), an OFF location is established in a receiving channel configuration switch (10), and it may be made to perform actuation mentioned above.

[0010]

[Effect of the Invention] If there is when can constitute this invention as mentioned above, a transmission channel and a receiving channel can be set as arbitration by actuation of a user, and improvement in the secrecy nature of a message can be aimed at and it transmits and receives by the same channel, improvement in \*\* and operability can be aimed at by actuation of one setting means of the transmission and reception.

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**DESCRIPTION OF DRAWINGS**

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[Brief Description of the Drawings]

[Drawing 1] It is the block diagram of the transceiver of this invention.

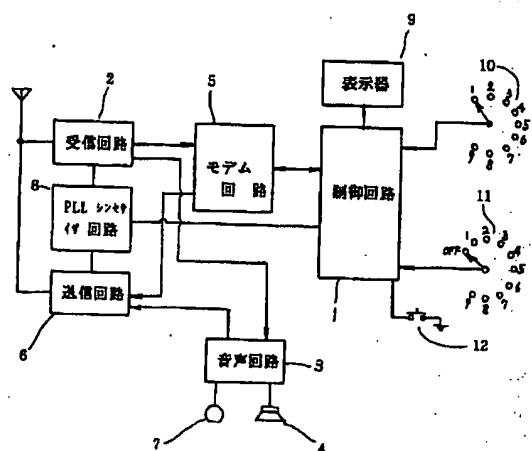
[Description of Notations]

- 1 Control Circuit
- 2 Receiving Circuit
- 6 Sending Circuit
- 10 Receiving Channel Configuration Switch
- 11 Transmission Channel Configuration Switch
- 12 Talk Switch

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Drawing selection drawing 1



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(19)日本国特許庁(JP)

(12) 公開特許公報(A)

(11)特許出願公開番号

特開平5-227132

(43)公開日 平成5年(1993)9月3日

(51)Int.Cl. <sup>5</sup>	識別記号	庁内整理番号	F I	技術表示箇所
H 0 4 K 1/00		Z 7117-5K		
H 0 4 B 1/50		7170-5K		

審査請求 未請求 請求項の数1(全 3 頁)

(21)出願番号 特願平4-27955

(22)出願日 平成4年(1992)2月14日

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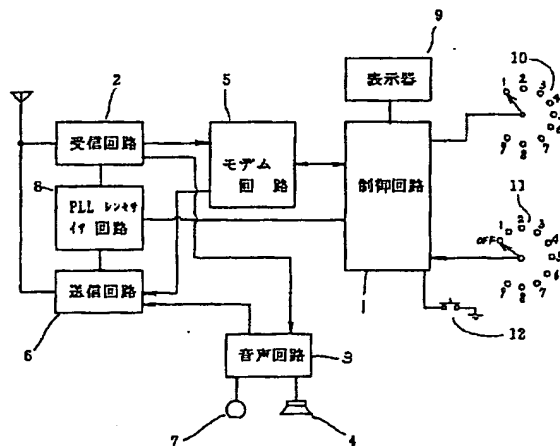
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(54)【発明の名称】 無線通信装置

(57)【要約】

【目的】 半二重により無線通信を行なうものにおいて、通話の秘匿性を向上させる。

【構成】 ユーザーの操作により送信チャンネル、受信チャンネルを任意に設定できるようにした。





## 【特許請求の範囲】

【請求項1】 送信手段と受信手段とを有し、半二重により無線通信を行なうものにおいて、送信周波数を任意なチャンネルに設定する手段と、受信周波数を任意なチャンネルに設定する手段と、前記夫々の設定手段により別個なチャンネルが設定されると、それに応じたチャンネルに前記送信手段、受信手段を制御し、且ついずれか一方のみの設定手段により所定のチャンネルが設定されると、前記送信手段、受信手段の両者ともそのチャンネルに制御する制御手段とを設けたことを特徴とする無線通信装置。

## 【発明の詳細な説明】

【0001】

【産業上の利用分野】本発明は、トランシーバ等の半二重により無線通信をなす無線通信装置に関する。

【0002】

【従来の技術】近年、電波法の改正に伴い、例えば特開昭61-9946号公報に開示されている半二重通信のトランシーバ等の免許を不要とする無線通信装置が急速に普及してきている。

【0003】

【発明が解決しようとする課題】ところで、トランシーバにおいては、通話チャンネルが9チャンネルと制限があるため、1つのチャンネル当りの利用者が非常に多くなり、又半二重であることから送信と受信を同一チャンネルに設定して通信するため、通話内容は全て第三者に洩れてしまうことになった。

【0004】

【課題を解決するための手段】本発明の無線通信装置は、送信手段と受信手段とを有し、半二重により無線通信を行なうものにおいて、送信周波数を任意なチャンネルに設定する手段と、受信周波数を任意なチャンネルに設定する手段と、前記夫々の設定手段により別個なチャンネルが設定されると、それに応じたチャンネルに前記送信手段、受信手段を制御し、且ついずれか一方のみの設定手段により所定のチャンネルが設定されると、前記送信手段、受信手段の両者ともそのチャンネルに制御する制御手段とを設けたものである。

【0005】

【作用】本発明は、上記のように構成したものであるから、ユーザーの操作により送信チャンネル、受信チャンネルを任意に設定できる。

【0006】

【実施例】本発明の実施例を図面に基づいて説明する。図1は、トランシーバのブロック図を示し、(1)はマイクロコンピュータで構成される制御回路で、内蔵のプログラムメモリの制御プログラムに従い全体の制御を司る。(2)は他のトランシーバよりの送信信号を受信する受信回路で、受信した通話信号は音声回路(3)を介してスピーカ(4)に供給され、一方受信した制御信号

はモデム回路(5)によりデジタル信号に復調されて制御回路(1)に供給される。(6)は他のトランシーバへ送信する送信回路で、制御回路(1)より出力される制御信号をモデム回路(5)を介して変調して入力し送信する。また、マイクロフォン(7)よりの音声信号も音声回路(3)を介して入力し送信する。尚、送信回路(6)は送信を行なうときのみ動作状態となるように制御回路(1)により制御されている。(8)は受信回路(2)に対しては局部発振信号を、そして送信回路

(6)には送信搬送波信号を与えるPLLシンセサイザ回路で、制御回路(1)からのデータに基づき所定の周波数を発生する。(9)は表示器で、送受信の夫々のチャンネル番号を制御回路(1)の制御の下に表示する。

(10)はロータリースイッチからなる受信チャンネル設定スイッチで、1~9チャンネルを設定できる。(11)は同じくロータリースイッチからなる送信チャンネル設定スイッチで、1~9チャンネル及びOFFを設定できる。(12)は自動復帰型のトークスイッチで、OFFのとき制御回路(1)は送信回路(6)を不動作にして受信回路(2)が所定のチャンネルに同調するようにPLLシンセサイザ回路(8)を制御し、そしてONのとき制御回路(1)は受信回路(2)を不動作にして送信回路(6)が所定のチャンネルで送信するようにPLLシンセサイザ回路(8)を制御することになる。

【0007】上記構成における動作を説明する。まず、本発明のトランシーバを有する2人のユーザーにて通話する場合に、例えば受信チャンネル設定スイッチ(10)を5チャンネル、送信チャンネル設定スイッチ(11)を2チャンネルに設定すると(この夫々のチャンネルはユーザー間で予め定めているものとする)、前述したように制御回路(1)はトークスイッチ(12)がOFFのとき送信回路(6)を不動作にして受信回路(2)が5チャンネルに同調するようにPLLシンセサイザ回路(8)を制御し、そしてトークスイッチ(12)がONのとき受信回路(2)を不動作にして送信回路(6)が2チャンネルで送信するようにPLLシンセサイザ回路(8)を制御することになる。従って、第三者は、一方向のみの通話しか聞くことができず、通話の秘匿性の向上を図れる。

【0008】又、例えば、受信チャンネル設定スイッチ(10)を5チャンネルに設定し、送信チャンネル設定スイッチ(11)をOFFに設定したままにすると、制御回路(1)は受信、送信ともに5チャンネルとして前述のように制御することになる。従って、秘匿性が小さい通話の場合で、送受信とも同一チャンネルで通話可能なとき、受信チャンネル設定スイッチ(10)のみの設定だけでよく、操作性が向上する。

【0009】尚、上記実施例では、送信チャンネル設定スイッチ(11)にOFF位置を設けたが、受信チャンネル設定スイッチ(10)にOFF位置を設け、上述し

(3)

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た動作を行なうようにしてもよい。

【0010】

【発明の効果】本発明は、上記のように構成したものであり、ユーザーの操作により送信チャンネル、受信チャンネルを任意に設定でき、通話の秘匿性の向上が図れ、又送受信を同一チャンネルで行なう場合にあっては送受信のいずれか一方の設定手段の操作で、操作性の向上を図ることができる。

【図面の簡単な説明】

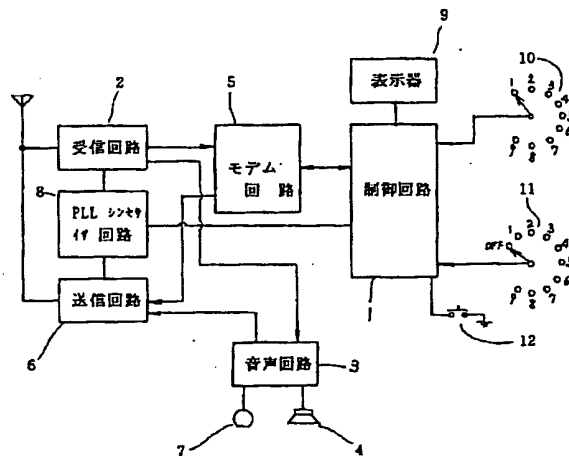
\*【図1】本発明のトランシーバのブロック図である。

【符号の説明】

- 1 制御回路
- 2 受信回路
- 6 送信回路
- 10 受信チャンネル設定スイッチ
- 11 送信チャンネル設定スイッチ
- 12 トークスイッチ

\*

【図1】



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